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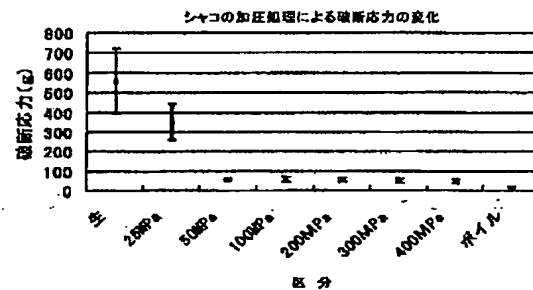
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(54) 【発明の名称】 シャコのむき身の製造方法。

(57) 【要約】

【課題】 脱殻しやすいエビ類（ホッコクアカエビ、クルマエビ、ボタンエビ等）については、生で体裁と歩留り良く脱殻して生で食することができるが、シャコは生では体裁と歩留り良く脱殻することができなかった。

【解決手段】 課題を解決するために本発明は、加圧処理によりシャコを脱殻し易くし、生に近い状態のシャコのむき身を提供するものである。従来のシャコのむき身の製造法とは違い、生に近い状態のシャコのむき身が製造でき、食材としての利用範囲が広がる。



注) 生と25MPaについては、計測中にサンプルの背部の筋肉が裂けてしまったので、正確な数値を測定できなかった。

【特許請求の範囲】

【請求項1】 加圧処理によるシャコのむき身の製造方法。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、シャコを加圧処理することにより脱殻し易くする方法に関する。

【0002】

【従来の技術】シャコの食し方としては、水または塩水で茹でて脱殻し易くし、食す方法が一般的である。

【0003】

【発明が解決しようとする課題】脱殻し易いエビ類（ホッコクアカエビ、クルマエビ、ボタンエビ等）については、生で体裁と歩留り良く脱殻することができるが、シャコは生では体裁と歩留り良く脱殻することができなかった。

【0004】本発明は、シャコを体裁と歩留り良く脱殻し、生に近い状態のシャコのむき身の製造を目的としている。

【0005】特開昭54-67076、特公昭60-17488「オキアミ及び小えび類の脱殻装置」では、2個の回転ドラムを使用し、エビの身を押し潰すことにより脱殻を行っているが、シャコをこの方法で脱殻すると体裁と歩留り良く脱殻するのは難しいと思われる。

【0006】

【課題を解決するための手段】上記の課題を解決するために本発明は、加圧処理によりシャコを脱殻し易くし、生に近い状態のシャコのむき身を提供するものである。

【0007】10分間の加圧処理を行ったシャコの脱殻し易さ（破断応力）の変化を図1に示す。

【0008】破断応力の数値が低い程、脱殻し易いことを示す。

【0009】図1に示したように、シャコは50MPa以上の加圧処理を行えば、脱殻し易くなることが判明した。

【0010】10分間の加圧処理を行ったシャコの筋肉の色調（明度）の変化を図2に示す。

【0011】筋肉の透明度を表すために、明度の測定は黒い板を下に敷き測定を行った。明度が低い程透明度が高く、高い程透明度が低いことを表す。

【0012】視覚的には、明度が35～50前後が生に近い状態であった。

【0013】図2に示したように、シャコは300MPa以上の加圧処理を行えば、筋肉の色調が白くなり、加熱した時の筋肉の色調に近づいていくことが判明した。

【0014】

【発明の実施の形態】以下本発明を詳細に説明する。本発明では、加圧処理したシャコを製造するにあたり、最初にシャコを包材により水とともに密封する。

【0015】次に、液圧により等方圧で加圧処理するこ

とができる恒温水循環装置を装備した装置を用い、加圧処理を行う。

【0016】加圧処理終了後は、ハサミや包丁等で頭部と尾部を切除し、甲殻の左右両端に沿って切れ目を入れ、手指により脱殻を行う。

【0017】本発明により製造された食品は、加圧処理により脱殻し易くなっているうえ、温水による加熱処理を行っていないので、生に近い状態を保っており、シャコ本来の味を楽しむことができる。

【0018】

【実施例】次に実施例を示してこの発明をさらに詳細かつ具体的に説明するが、この発明は以下の例に限定されるものではない。

【0019】加圧処理によるシャコのむき身の製造方法は以下のとおりである。

【0020】最初にシャコを包材により水とともに密封する。

【0021】今回、加圧装置として、三菱重工業株式会社製の食品加圧試験装置（MCT-150F）を用いた。

【0022】高圧加圧水槽の周りを恒温水循環装置で冷却し、加圧処理中の高圧加圧水槽が10℃前後になるように調整する。

【0023】50～200MPaで、10分間の加圧処理を行う。

【0024】実施例ではシャコを包材により水とともに密封したが、これは高圧加圧水槽の中を清浄に保つためのものである。実際にシャコのむき身を製造する際には直接高圧加圧水槽にシャコを入れ、加圧処理を行うこともできる。

【0025】実施例では、シャコの脱殻のし易さの要因を圧力によるものであるということを明確にするために、高圧加圧水槽を冷却して行った。実際にシャコのむき身を製造する際には、圧力処理中の高圧加圧水槽中の水温の変化はプラス10℃前後であるので、高圧加圧水槽の冷却については必須ということではない。

【0026】加圧処理終了後は、ハサミや包丁等で頭部と尾部を切除し、甲殻の左右両端に沿って切れ目を入れ、手指により脱殻を行う。

【0027】出来あがったむき身の歩留りは、生（殻付き）から計算すると30%前後となる。

【0028】

【発明の効果】以上詳記したように、本発明においては、加圧処理によりシャコを体裁と歩留り良く脱殻し易くし、生の状態に近いシャコのむき身の製造法であり、本発明により奏せられる効果は次の通りである。

【0029】1）従来のシャコのむき身の製造法とは違い、生に近い状態のシャコのむき身が製造でき、食材としての利用範囲が広がる。

【0030】2）シャコ以外の甲殻類にもこの製造技術

が応用できるものと推察され、新しい食材が誕生する可能性がある。

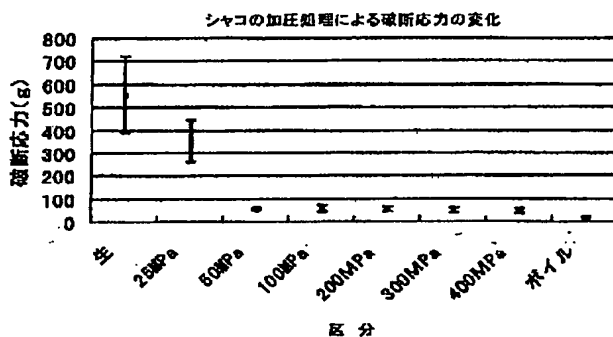
【図面の簡単な説明】

【図1】図1は加圧処理による、シャコの破断応力の変

化を示したものである。

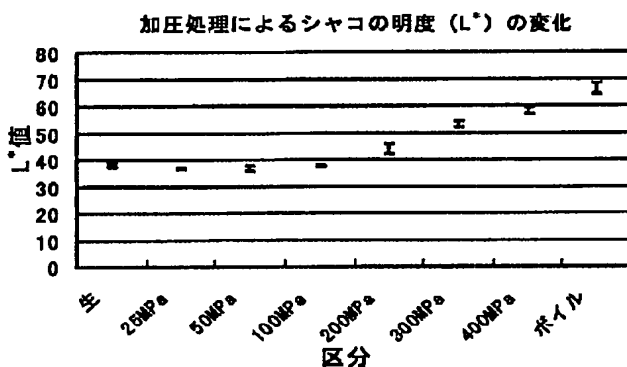
【図2】図2は加圧処理による、シャコの色調（明度）の変化を示したものである。

【図1】



注) 生と25MPaについては、計測中にサンプルの背部の筋肉が裂けてしまったので、正確な数値を測定できなかった。

【図2】



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(71)Applicant : NAGASAKI PREFECTURE

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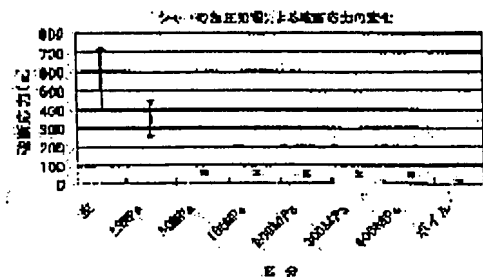
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## (54) METHOD FOR PRODUCING SHUCKED SQUILLA

## (57)Abstract:

PROBLEM TO BE SOLVED: To solve the problems of a raw squilla not being shucked neatly in a good yield while raw shrimps capable of being readily shucked (e.g. a northern shrimp, a banded shrimp and a peony shrimp) can be shucked neatly in a good yield and can be eaten.

SOLUTION: The squilla is subjected to a pressurizing treatment to facilitate the shucking and to provide the objective shucked squilla in a state near to the raw state. The shucked squilla in the state near to the raw state can be produced thereby different from a conventional method for producing the shucked squilla, and the utilizing range thereof as a food is widened.



注) 本発明は、生きたスquillaを、高圧処理することにより、殻を剥くことが容易になり、食味も向上する。

## LEGAL STATUS

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28.09.2001

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[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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CLAIMS

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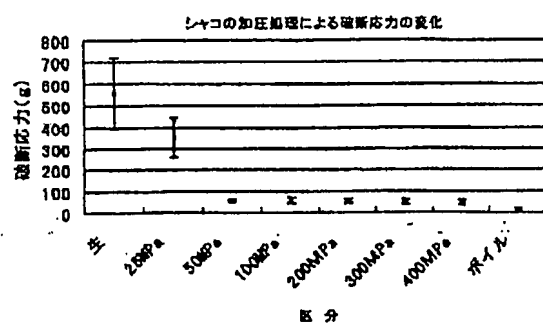
[Claim(s)]

[Claim 1] The squilla by pressure treatment turns and it is the manufacture method of the body.

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[Translation done.]

Drawing selection [Representative drawing]



注) 生と25MPaについては、計測中にサンプルの背部の筋肉が裂けてしまったので、正確な数値を測定できなかった。

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the method which make cast skin easy to carry out by carrying out pressure treatment of the squilla.

[0002]

[Description of the Prior Art] Cast skin is made easy for a squilla to eat, to boil with water or salt water as a way, and to carry out, and the \*\*\*\* method is common.

[0003]

[Problem(s) to be Solved by the Invention] About the shrimps (Hokkoku AKAEBI, a prawn, button shrimp, etc.) which are easy to carry out cast skin, although the yield could improve cast skin to appearance by raw, in the flesh, the yield was not able to improve the squilla cast skin to appearance.

[0004] this invention improves [ the yield ] a squilla cast skin to appearance, the squilla of the state near raw turns to it, and it aims at manufacture of the body.

[0005] Although cast skin is performed by using two rotating drums and crushing the body of a shrimp in JP,54-67076,A and JP,60-17488,B "the cast-skin equipment of a krill and a small Macrura", if the cast skin of the squilla is carried out by this method, it will be thought that it is difficult for the yield to improve cast skin to appearance.

[0006]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, the cast skin of the squilla is made easy to carry out by pressure treatment, the squilla of the state near raw turns to this invention, and it offers the body.

[0007] Change of (rupture stress) is shown in drawing 1 in the cast-skin ease of carrying out of a squilla which performed pressure treatment for 10 minutes.

[0008] The numeric value of rupture stress shows that it is easy to carry out the cast skin of the low.

[0009] As shown in drawing 1, when performing pressure treatment of 50 or more MPas, the bird clapper made the squilla clear that it is easy to carry out cast skin.

[0010] Change of the color tone (lightness) of the muscles of a squilla which performed \*\*\*\*\* for 10 minutes is shown in drawing 2.

[0011] Since muscular transparency was expressed, measurement of lightness measured by covering with a black board downward. It expresses that transparency is so low that it is as highly transparent as a low and lightness is high.

[0012] Visually, lightness was in the state with 35-50 order near raw.

[0013] As shown in drawing 2, when performing pressure treatment of 300 or more MPas, a muscular color tone becoming white and approaching the color tone of the muscles when heating made the squilla clear.

[0014]

[Embodiments of the Invention] this invention is explained in detail below. In this invention, a squilla is first sealed with water with an wrapping material in manufacturing the squilla which carried out pressure treatment.

[0015] next, the constant temperature which can carry out pressure treatment by \*\*\*\*\* by the fluid pressure -- pressure treatment is performed using the equipment equipped with water cycle equipment

[0016] After a pressure treatment end excises a head and a tail with scissors, a kitchen knife, etc., puts in a break along the right-and-left ends of a shell, and performs cast skin with a finger.

[0017] since heat-treatment with warm water is omitted in being easy to carry out the cast skin of the food manufactured by this invention by pressure treatment -- the state near raw -- maintaining -- \*\*\*\* -- a squilla -- if the original taste is enjoyed, it can \*\*

[0018]

[Example] Next, although an example is shown and this invention is explained still in detail and concretely, this invention is not limited to the following examples.

[0019] The squilla by pressure treatment turns and the manufacture method of the body is as follows.

[0020] A squilla is first sealed with water with an wrapping material.

[0021] This time, the food pressure-test equipment (MCT-150F) by Mitsubishi Heavy Industries, Ltd. was used as a pressurizer.



[0022] the surroundings of a high-pressure pressurization tank -- constant temperature -- it cools with water cycle equipment, and it adjusts so that the high-pressure pressurization tank under pressure treatment may become before and after 10 degrees C

[0023] Pressure treatment for 10 minutes is performed by 50-200Mpa.

[0024] Although the squilla was sealed with water with the wrapping material in the example, this is for keeping the inside of a high-pressure pressurization tank pure. In case a squilla actually turns and the body is manufactured, a squilla can be put into a direct high-pressure pressurization tank, and pressure treatment can also be performed.

[0025] In the example, in order to clarify that it is what depends the factor of the ease of carrying out of the cast skin of a squilla on a pressure, it carried out by cooling a high-pressure pressurization tank. the time of a squilla actually turning and manufacturing the body -- change of the water temperature in the high-pressure pressurization tank under pressure processing -- plus 10degree C -- since it is order, it is not indispensable about cooling of a high-pressure pressurization tank

[0026] After a pressure treatment end excises a head and a tail with scissors, a kitchen knife, etc., puts in a break along the right-and-left ends of a shell, and performs cast skin with a finger.

[0027] It turns, and if the done yield which is the body is calculated from raw (with husks), it will become 30% order.

[0028]

[Effect of the Invention] The yield makes cast skin easy to improve a squilla to appearance by pressure treatment in this invention, as a full account was given above. The squilla near a student's condition turns, it is the manufacturing method of the body, and the effect of being done so by this invention is as follows.

[0029] 1) The conventional squilla turns, unlike the manufacturing method of the body, the squilla of the state near raw turns, the body can be manufactured, and the use range as foods spreads.

[0030] 2) a squilla -- it is imagined as what can apply this manufacturing technology also to the crustacean of an except, and new foods may be born

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PRIOR ART

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TECHNICAL PROBLEM

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MEANS

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EXAMPLE

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[0024] Although the squilla was sealed with water with the wrapping material in the example, this is for keeping the inside of a high-pressure pressurization tank pure. In case a squilla actually turns and the body is manufactured, a squilla can be put into a direct high-pressure pressurization tank, and pressure treatment can also be performed.

[0025] In the example, in order to clarify that it is what depends the factor of the ease of carrying out of the cast skin of a squilla on a pressure, it carried out by cooling a high-pressure pressurization tank. the time of a squilla actually turning and manufacturing the body -- change of the water temperature in the high-pressure pressurization tank under pressure processing -- plus 10degree C -- since it is order, it is not indispensable about cooling of a high-pressure pressurization tank

[0026] After a pressure treatment end excises a head and a tail with scissors, a kitchen knife, etc., puts in a break along the right-and-left ends of a shell, and performs cast skin with a finger.

[0027] It turns, and if the done yield which is the body is calculated from raw (with husks), it will become 30% order.

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[Translation done.]

\* NOTICES \*

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- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] Drawing 1 shows change of the rupture stress of a squilla by pressure treatment.

[Drawing 2] Drawing 2 shows change of the color tone (lightness) of a squilla by pressure treatment.

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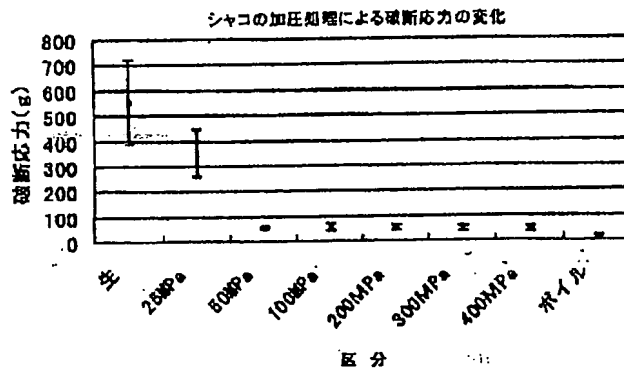
[Translation done.]

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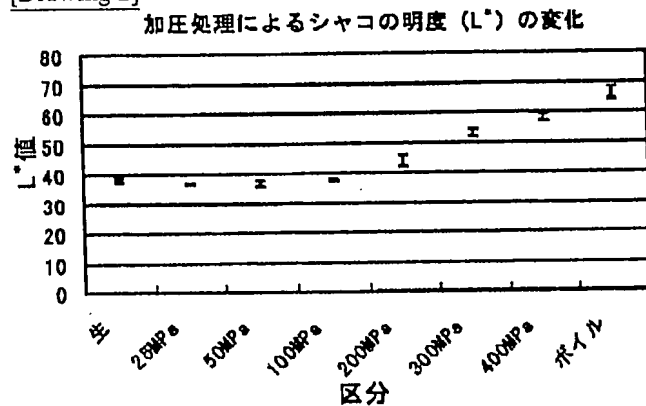
## DRAWINGS



注) 生と25MPaについては、計測中にサンプルの背部の筋肉が裂けてしまったので、正確な数値を測定できなかった。

[Drawing 1]

[Drawing 2]



[Translation done.]